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(19) (CA) **CANADIAN PATENT** (12)

(54) Puzzle for Persons with Impaired Vision

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**Canada**

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ABSTRACT OF THE DISCLOSURE

The present invention provides a three-dimensional puzzle having a plurality of puzzle pieces moveable relative to one another and being distinguishable by touch for determining when the pieces are in the puzzle solving position.

FIELD OF THE INVENTION

The present invention relates to a three-dimensional hand manipulated puzzle suitable for use by blind persons.

BACKGROUND OF THE INVENTION

Recently there has been a keen interest in hand manipulated puzzles. The most common of these puzzles is the RUBIK's\* Cube which is made up of different coloured pieces moveable relative to one another and secured by a common core. The object of the RUBIK's\* Cube is to move  
10 the pieces such that the colours align with one another at the different faces of the cube.

Another hand manipulated puzzle is sold under the trade mark CRAZY ACES. In this particular puzzle four totally separate cubes are provided on their faces with the different suits found in a deck of cards. The object of the game is to stack the cubes such that no one suit is repeated at any side of the stack.

The two puzzles described above as well as other similar puzzles have become extremely popular. In fact,  
20 there are now national RUBIK's\* Cube contests to determine champions for solving the RUBIK's\* Cube in the shortest period of time.

The one unfortunate aspect of puzzles such as the RUBIK's\* Cube is that the only way to determine when the puzzle is solved is through visual inspection and therefore these puzzles cannot be played by persons with impaired vision who are unable to see when the pieces have been moved to the appropriate puzzle solving positions.

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\* TM



1     SUMMARY OF THE PRESENT INVENTION

      The present invention provides a three-dimensional hand manipulated puzzle suitable for use by persons with impaired vision. The puzzle of the present invention comprises a plurality of puzzle pieces which are moveable relative to one another to at least one correct and numerous incorrect puzzle solving positions. Each of the puzzle pieces has a number of faces which are distinguishable by touch. A person playing with the  
10 puzzle can therefore determine by feel, when the puzzle has been solved.

      One of the prime advantages of the puzzle of the present invention is that although it is directed to persons with impaired vision it may also be played by persons without impaired vision since the faces of the pieces which are distinguishable by touch are also distinguishable by sight.

BRIEF DISCUSSION OF THE DRAWINGS

      The above as well as other advantages and features  
20 of the present invention will be described in greater detail according to the preferred embodiments of the present invention in which:

      Figure 1 is a front perspective view looking down on a three-dimensional puzzle according to an aspect of the present invention:

      Figure 2 is a bottom perspective view showing the rear of the puzzle of Figure 1;

      Figure 3 is a front perspective view looking down on a different puzzle according to a further preferred  
30 embodiment of the present invention;

1           Figure 4 is a bottom perspective view of the rear of  
the puzzle shown in Figure 3;

Figure 5 is a front perspective view looking down on  
a plurality of puzzle pieces according to an alternate  
preferred form of the present invention; and

Figure 6 is a rear perspective view looking up at  
the puzzle pieces shown in Figure 5.

DETAILED DESCRIPTION ACCORDING TO THE PREFERRED EMBODIMENTS

A puzzle generally indicated at 1 in Figures 1 and 2  
10 is made up of a plurality of playing pieces marked in a  
brail-like manner with projections on the different faces  
of the playing pieces. These playing pieces are  
integrated by a common core and are all moveable at the  
core relative to one another as is well known in the  
art. The puzzle is solved as shown in the Figures 1 and  
2 positions by aligning the pieces such that each piece  
presents the same number of projections on all faces of  
the puzzle, i.e. at face A, each piece presents a single  
projection; at face B each piece presents six  
20 projections; at face C each piece presents three  
projections, at face D each piece presents two  
projections; at face E each piece presents four  
projections and at face F each piece presents five  
projections. Since these projections are distinguishable  
by touch a person playing with the puzzle can determine  
by simply feeling each of its faces when the puzzle has  
been solved. Similarly one can determine by touch when  
the puzzle has not been solved as would be the case if  
the puzzle pieces were moved such that the number of  
30 projections per piece were not consistent at all faces of

1 the puzzle.

Figures 3 and 4 show a puzzle 3 in which various sides of the puzzle pieces are again distinguishable by touch although in a somewhat different manner from puzzle 1 described above. Here it will be seen that when the puzzle is solved, as shown in Figures 3 and 4, the puzzle pieces at faces  $A_1$ ,  $C_1$  and  $D_1$  of the puzzle have different patterns of recesses with each pattern being consistent at each face. At face  $B_1$  the puzzle pieces are all flattened and at faces  $E_1$  and  $F_1$  the puzzle pieces present distinct textured surfaces. However, consistent with puzzle 1, a person playing with puzzle 3 can determine by running his or her hands over each of the faces when the pieces are in or are out of the correct puzzle solving position.

Figures 5 and 6 show a puzzle formed of pieces 5 through 8 of modified structure from the puzzle described above but of similar principle of operation. According to this particular embodiment of the present invention the pieces are not joined together but rather are totally separable from one another. Each face of each piece bears an arrangement of bosses which are exaggerated to the extent that they are easily distinguishable by touch to determine when the puzzle is in an unsolved position as shown in Figures 5 and 6 and to determine when it is in a solved position as would be the case when no arrangement of bosses is repeated at any one side of the puzzle with the cubes stacked together.

As described above, one of the highly advantageous features of the present invention is that both persons

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1     with and without impaired vision can play with any of the  
puzzles shown in Figures 1 through 6. This is a result  
of the fact that the various faces on the playing pieces  
are manually identifiable through their relief patterns  
and are also visually identifiable by these same patterns.

          Although various preferred embodiments of the  
invention have been described herein in detail it will be  
appreciated by those skilled in the art that variations  
may be made thereto without departing from the spirit of  
10    the invention or the scope of the appended claims.

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THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

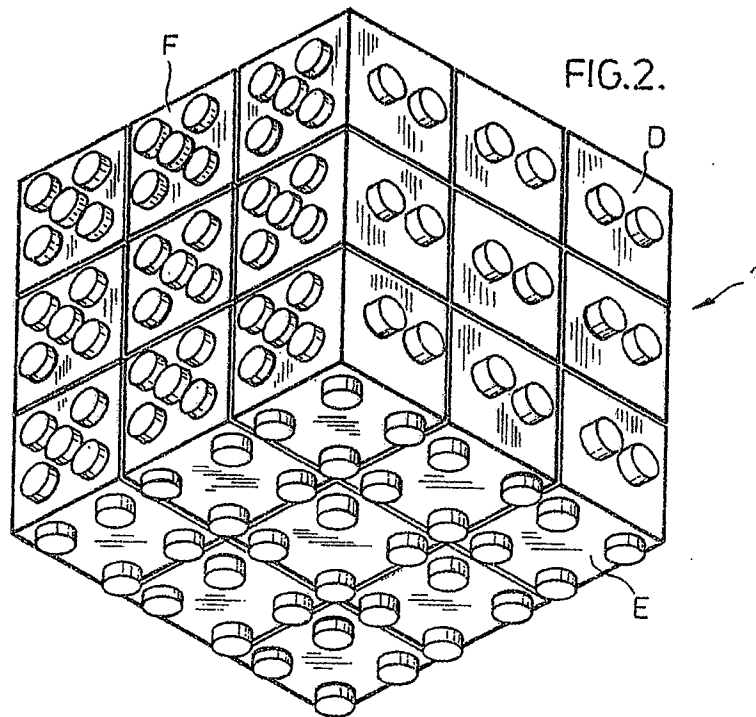
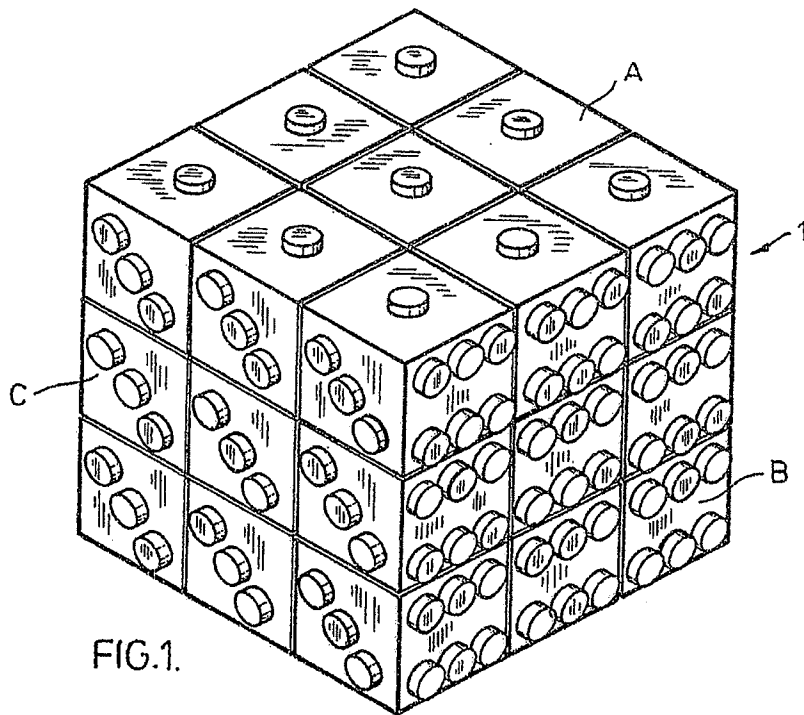
1. A three-dimensional hand manipulated puzzle suitable for use by persons with impaired vision, said puzzle comprising a plurality of puzzle pieces moveable relative to one another to a least one correct and numerous incorrect puzzle solving positions, each puzzle piece having a plurality of faces of various different textures which are distinguishable by touch whereby the correct and the incorrect puzzle solving positions are detectable by feeling of the puzzle.

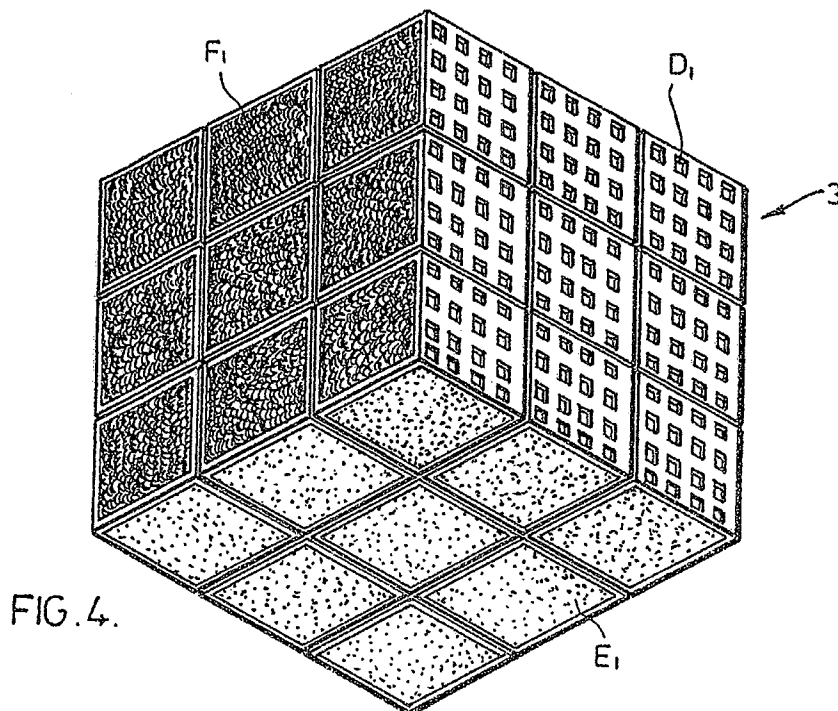
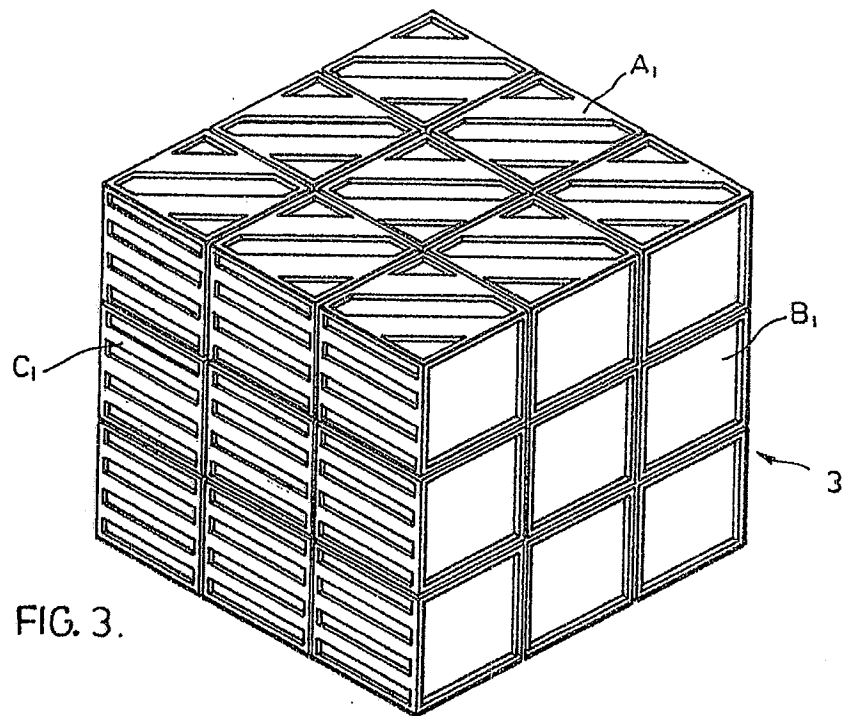
2. A puzzle as claimed in Claims 1, 2 or 3 wherein said puzzle pieces are integrated by a common core and are moveable at said core relative to one another.

3. A puzzle as claimed in Claim 1, 2 or 3 wherein said puzzle pieces are totally separable from one another.









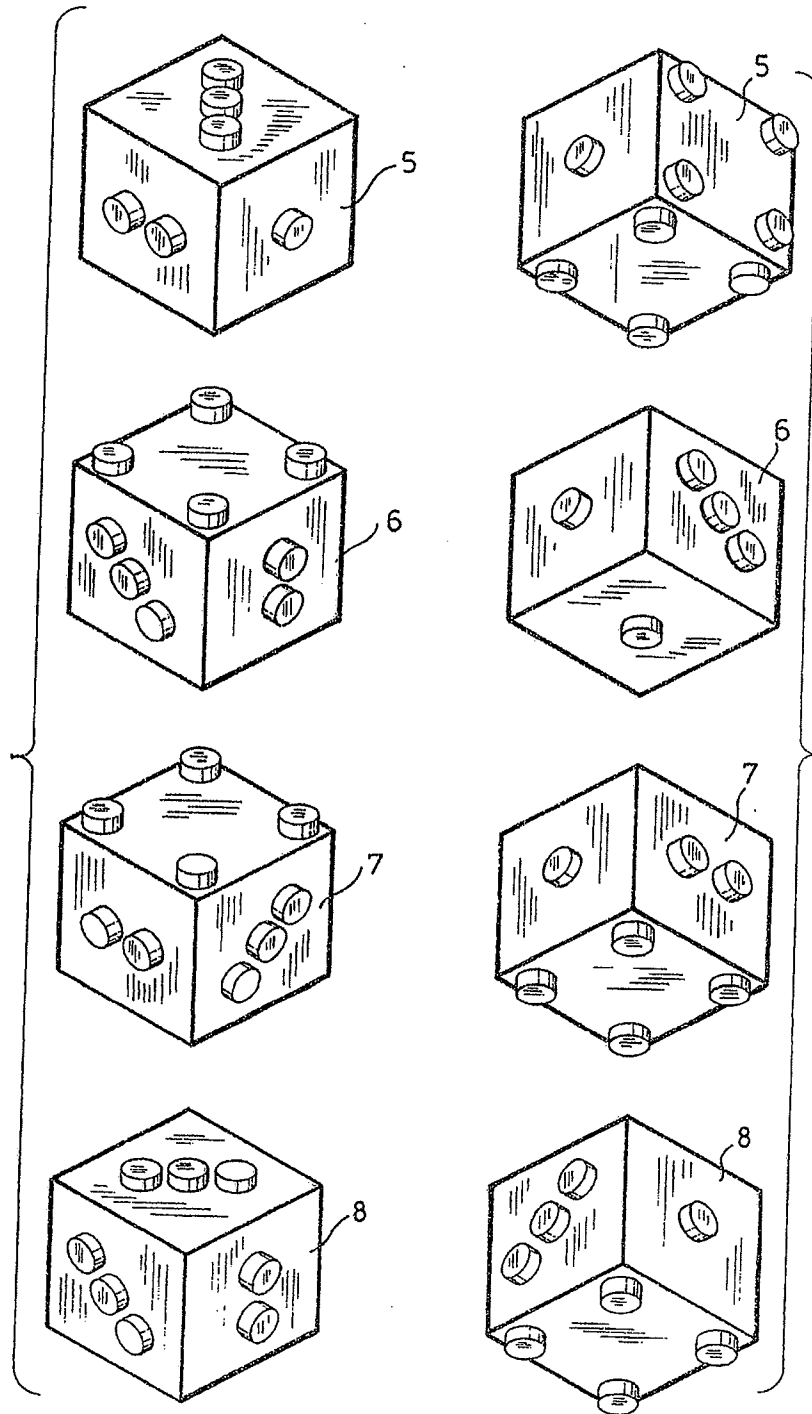


FIG. 5.

FIG. 6.

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